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ABSTRACT

This booklet summarizes the science chapter from the "Handbook of Research on Improving Student Achievement," a report sponsored by the Alliance for Curriculum Reform and also published by the Educational Research Service. The handbook is based on the idea that efforts to improve instruction must focus on the existing knowledge base on effective teaching and learning. The handbook gives school administrators and teachers a ready source of authoritative yet practitioner-based information about the research on effective teaching and learning. The practices identified in this booklet reflect a mixture of emerging strategies and practices in long-term use. Presented are a summary of the research supporting each practice, how this research might be applied in actual classroom practice, and a description of a list of the most important studies that support the practice. Practices discussed are: (1) Learning Cycle Approach; (2) Cooperative Learning; (3) Analogies; (4) Wait Time; (5) Concept Mapping; (6) Computer Simulations; (7) Microcomputer-Based Laboratories; (8) Systematic Approaches in Problem Solving; (9) Conceptual Understanding in Problem Solving; (10) Science-Technology-Society; (11) Real-Life Situations; and (12) Discrepant Events. Resources for additional study and discussion are listed. Contains 225 references. (PVD)

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